

**NEOMACHLOTICA, A NEW GENUS OF GLYPHAPTERIGIDAE
(LEPIDOPTERA)**

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Abstract.—*Neomachlotica*, new genus, and *N. spiraea*, new species, are described in Glyphipterigidae. Species transferred to *Neomachlotica* are *Glyphipterix actinota* Walsingham, *Machlotica atractias* Meyrick, and *Machlotica nebras* Meyrick, all Neotropical. *Neomachlotica spiraea* occurs in Florida, and the larvae feed on *Boehmeria cylindrica* (Linnaeus) Schwarz (Urticaceae).

In anticipation of a synopsis of Glyphipterigidae, the following new generic name is published here ahead of a Nearctic revision of the family to make this name available for three Neotropical species currently misplaced in other genera.

Neomachlotica Heppner, NEW GENUS

Type-species.—*Neomachlotica spiraea* Heppner, new species.

This genus may be distinguished from related genera like *Abrenthia* Busck and *Machlotica* Meyrick by the convergent veins CuA1 and CuA2 at the termen of the forewing.

Description.—Adults small (forewing length 3.0–4.0 mm). *Head*: Frons and vertex smooth scaled; labial palpus recurved and very dorsoventrally flattened on apical 2 segments, with basal and 2nd segments subequal in length, apical segment twice as long as basal segment; maxillary palpus 3-segmented with very long 2nd segment; anterior tentorial pits widely separated (Fig. 2); haustellum developed; pilifers large; eye large; ocellus present; antenna filiform. *Thorax*: Smooth scaled; forewing oblong, with pterostigma; costal margin straight to pterostigmal convexity, then rounded to apex; termen very oblique to indistinct tornus; dorsal margin straight to rounded anal angle; chorda developed, with central vertical vein; no vein in cell; Sc to costal margin before $\frac{1}{2}$ of forewing length; R1–R5 to costal margin; M1 to apex; M1–M3 equidistant at end of cell; CuA2 arising distant from end of cell and greatly convergent to CuA1 at termen; CuP present at

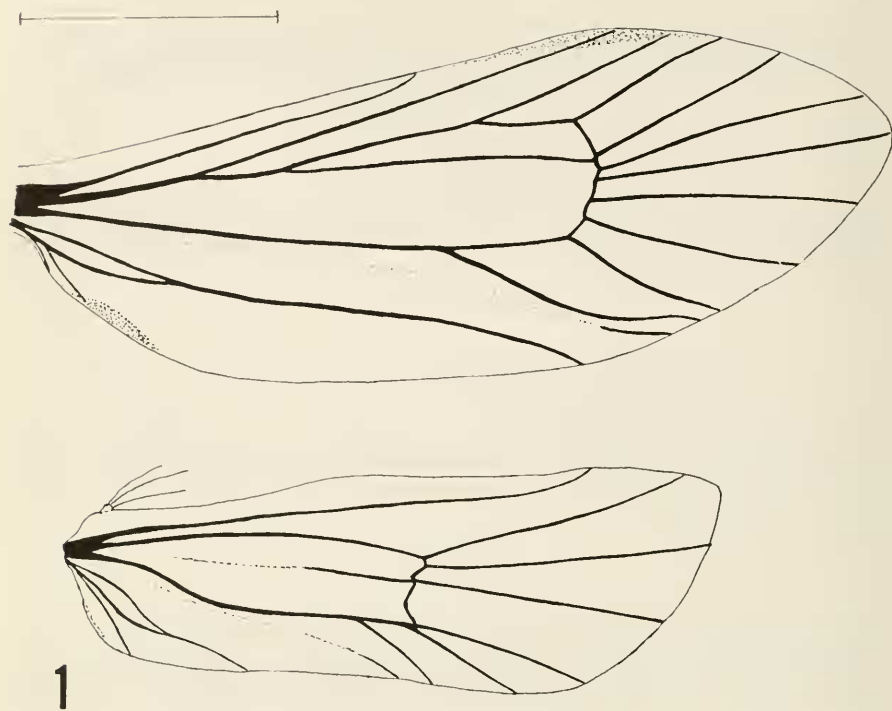


Fig. 1. *Neomachlotica spiraea*, wing venation (scale line = 1 mm) [USNM slide 77225].

tornus; A1 + A2 with prominent basal stalk; hindwing with Sc + R1 to $\frac{3}{4}$ of wing; Rs directed up to costal margin before apex; M1 and M2 close together at end of cell, distant from M3; M3 approximate to CuA1 at end of cell; CuA2 nearly parallel to CuA1; A1 + A2 with long basal stalk. *Abdomen*: Posterior segment modified in male as genitalia hood with ventral split; no coremata. *Male genitalia*: Tegumen stout and fused with broad vinculum; saccus absent; tuba analis prominent; valva simple, setaceous mesally, with large corema (deciduous) on lateral side near base; valval base formed into elongate dorsal transtillar process and ventral process forming base of anellus; anellus a short tube with aedeagus attached at tip of anellus; aedeagus without a phallobase, with enlarged tip having a ring of recurved hooks and a band of spines and setae. *Female genitalia*: Ovipositor with moderately heavily sclerotized papilla analis; apophyses moderately long; ostium bursae a sclerotized cup with a central cone on intersegmental membrane between segments 7 and 8, or simple and in proximity to ductus bursae enlargement; ductus bursae thin, membranous, usually expanded before bursa by enlargement for juncture with ductus seminalis; bursa cop-

ulatrix ovate, with smaller accessory bursa anteriorly; signum on main bursal sac, a line of fused spicules or more diffuse spicule patch; ductus seminalis arising from enlarged section of ductus bursa; bulla seminalis small. *Larva*: Small; prolegs vestigial (Needham, 1955). *Pupa*: Not protruded (Needham, 1955).

Remarks.—*Neomachlotica* is related to *Machlotica*, *Abrenthia*, and *Trapeziophora* Walsingham, and is largely a Neotropical genus with only the type-species entering North America in southern Florida. Two species, currently undescribed, are known from northeastern Mexico and may eventually be collected in subtropical southeastern Texas. Wing venation and the unusual characters of the genitalia form the main differences from related genera. In none of the above three related genera are veins CuA1 and CuA2 of the forewings convergent at the wing margin as in *Neomachlotica* and the other genera also do not have the unique genital characters of *Neomachlotica*: The unusual aedeagus and transtillar process of the male and the conelike ostium of the female (in most *Neomachlotica* females). The only genus I have seen that has a similar conelike ostium in females is in the genus *Brenthia* Clemens of the family Choreutidae.

The only biological information known is that the Florida species described below feeds on *Boehmeria cylindrica* (Linnaeus) Schwarz (Urticaceae) as a terminal bud- and stem-boring larva (Needham, 1955).

The following Neotropical species are hereby transferred to *Neomachlotica*:

Neomachlotica actinota (Walsingham, 1914) (*Glyphipteryx* [sic]), NEW COMBINATION.

Neomachlotica atractias (Meyrick, 1909) (*Machlotica*), NEW COMBINATION.

Neomachlotica nebras (Meyrick, 1909) (*Machlotica*), NEW COMBINATION.

Together with the new species described below, there are four described species in the genus. I have examined three additional undescribed species from Mexico and the West Indies that also belong in *Neomachlotica*.

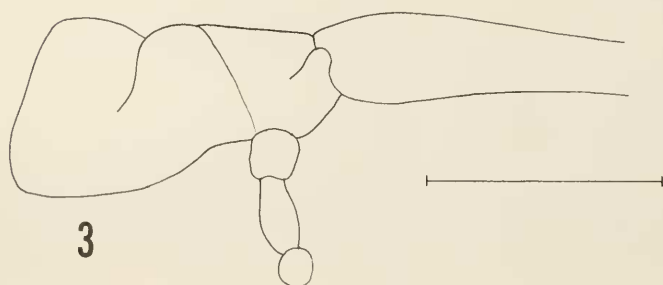
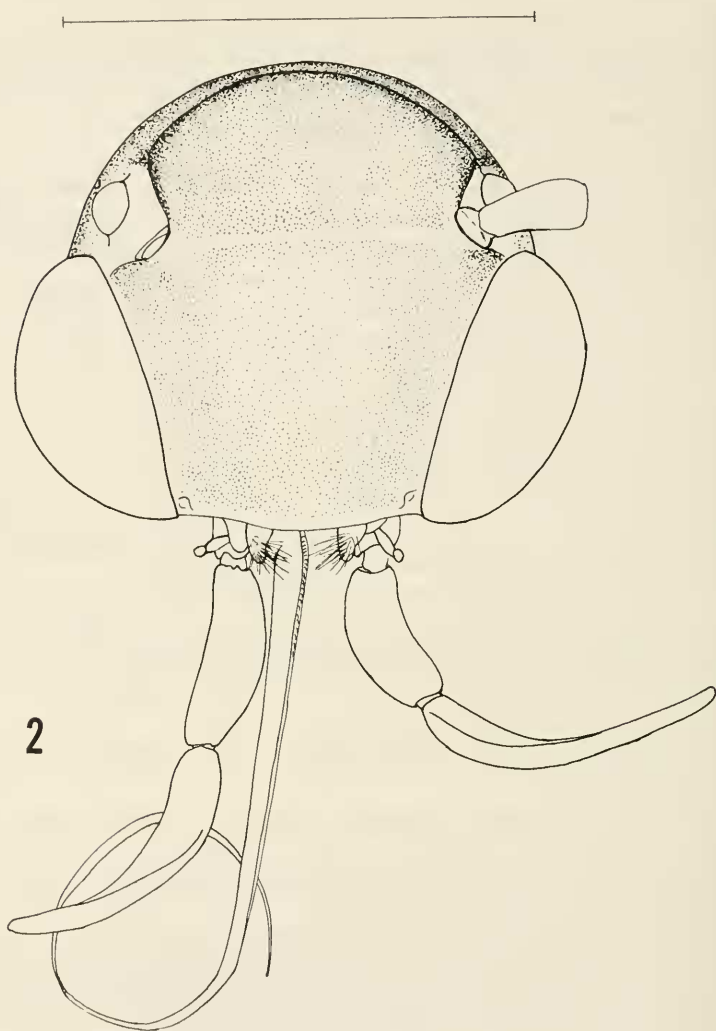
The name of the genus is derived from the Greek for "new *Machlotica* [fighting lotus]."

Neomachlotica spiraea Heppner, NEW SPECIES

Machlotica n. sp., Needham, 1955: 351.

Machlotica sp., Kimball, 1965: 287.

Male.—Forewing length 3.2–4.0 mm. *Head*: Dark fuscous with purple iridescence; frons with buff along clypeal and lateral edges; labial palpus with basal segment buff, 2nd segment dark fuscous with 2 buff transverse lines ventrally and buff dorsally, and apical segment fuscous dorsally and



dark fuscous ventrally with buff lateral borders; maxillary palpus with very elongate middle segment (ca. twice length of basal segment); antenna with fuscous dorsal scales. *Thorax*: Fuscous; patagia fuscous with purple iridescence; venter white; legs fuscous with white at joints. *Forewing*: Dark fuscous with approximately 14 narrow dotted longitudinal striae of greenish yellow from base to middle of wing, with distal end of striae field convex; dorsal margin near base with yellow scale line; middle of wing with distally convex fuscous fascia, bordered distally by a short silver fascia from the costal margin and greenish-yellow scale striae towards tornus; middle silver fascia from costa followed by yellow longitudinal striae and then by two more short silver fasciae toward apex; apex and part of termen with silver border; fringe fuscous; ventral surface gray fuscous. *Abdomen*: Fuscous with silvery scales on posterior margin of each segment; venter mostly white. *Hindwing*: Gray fuscous basally merging to fuscous near termen; fringe fuscous; ventral surface buff gray merging to fuscous near apex, with 3 silver short fasciae from costal margin near apex. *Genitalia*: Tuba analis long, wide; tegumen rounded; vinculum rounded, convex, without saccus; valva elongate, oblong, with rounded apex, setaceous; valva with coremata setae on lateral side; base of valva extended as narrow transtilla, overlapping with same from each valva; anellus short, tubular; aedeagus short, nearly subequal to valval length, narrow, without phallobase; aedeagus tip bulbous with wide ring of stout recurved hooks surrounded by spicule hood; cornutus a short tubule; ductus ejaculatorius emergent from base of aedeagus, with campanulate hood.

Female.—Forewing length 3.2–3.5 mm. Similar to male. *Genitalia*: Ovipositor short; papilla analis sclerotized with sharp, incurving tip; apophyses long, thin, with posterior pair slightly longer than anterior pair; ostium bursae a shallow cup with a central cone having a very small ostial opening, all in a larger oval depression bordered laterally by 2 semi-circular ridges; ductus bursae long and as wide as ostial opening, to sclerotized bulbous area near bursa where ductus seminalis emerges; bursa copulatrix ovate with an accessory bursa half its size attached anteriorly by a short duct; signum a linear fused spicule line on ventrum of bursa, $\frac{1}{2}$ as long as longer bursal diameter.

Larva.—Pale, with black head capsule and prothoracic tergal plate; prolegs vestigial (Needham, 1955).

Pupa.—Lacking dorsal abdominal setae, probably due to nonprotrusion from cocoon (Needham, 1955).

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Figs. 2–3. *Neomachlotica spiraea*. 2, Head (scale line = 0.5 mm). 3, Maxillary palpus (enlarged) (scale line = 0.1 mm) [USNM slide 77721].

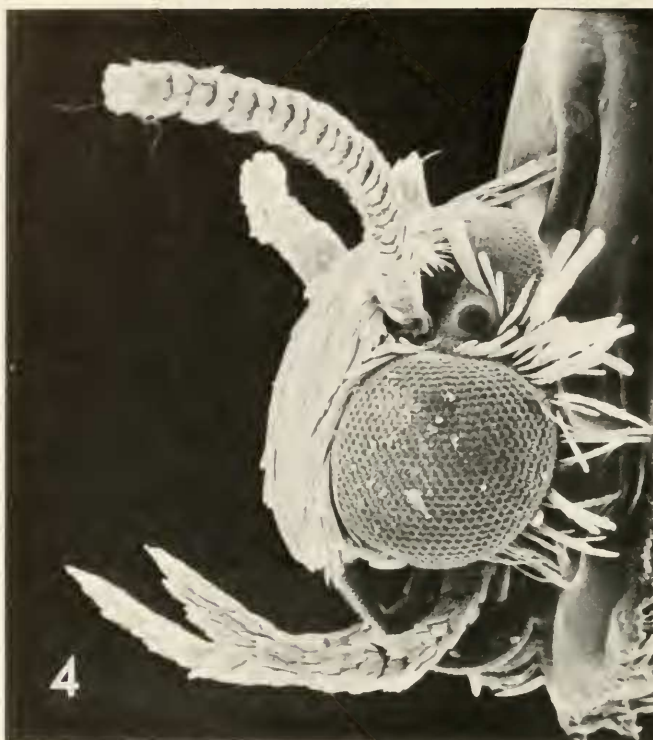


Fig. 4. *Neomachlotica spiraea*, head of male (100 $\times$) [SEM slide, USNM 77342].

Types.—*Holotype* ♂: Fisheating Creek, 2 mi. SE Palmdale, Glades Co., Florida, 6 May 1975, on flowers *Pluchea purpurascens*, J. B. Heppner (USNM). Paratypes (3 ♂, 5 ♀). *Florida*: Dade Co.: Florida City, 21 Feb 1954 (2 ♀), M. O. Gleen (USNM); 25 Feb 1954 (1 ♂), M. O. Glenn (USNM). Glades Co.: same date as for holotype (1 ♀) (JBH). Highlands Co.: Archbold Biological Sta., 12 Jan 1965 (1 ♂), S. W. Frost (CPK); 23 Jan 1979, (1 ♂), H. V. Weems, Jr. and S. Halkin (FSCA); 3 Mar 1952, reared ex *Boehmeria cylindrica* (emerged 27 Mar 1952), (2 ♀), J. G. Needham (USNM). (Paratype to BMNH.)

Additional specimens (3 ♂).—*Florida*: Monroe Co.: Garden Key, Dry Tortugas, 8 May 1961, R. E. Woodruff (CPK and FSCA).

Distribution.—Known only from central to southern Florida.

Flight period.—January to March; May.

Hosts.—*Boehmeria cylindrica* (Linnaeus) Schwarz (Urticaceae).

Biology.—The species has been reared by Needham (1955) but no larval or pupal specimens could be located in museum collections. The larva is a

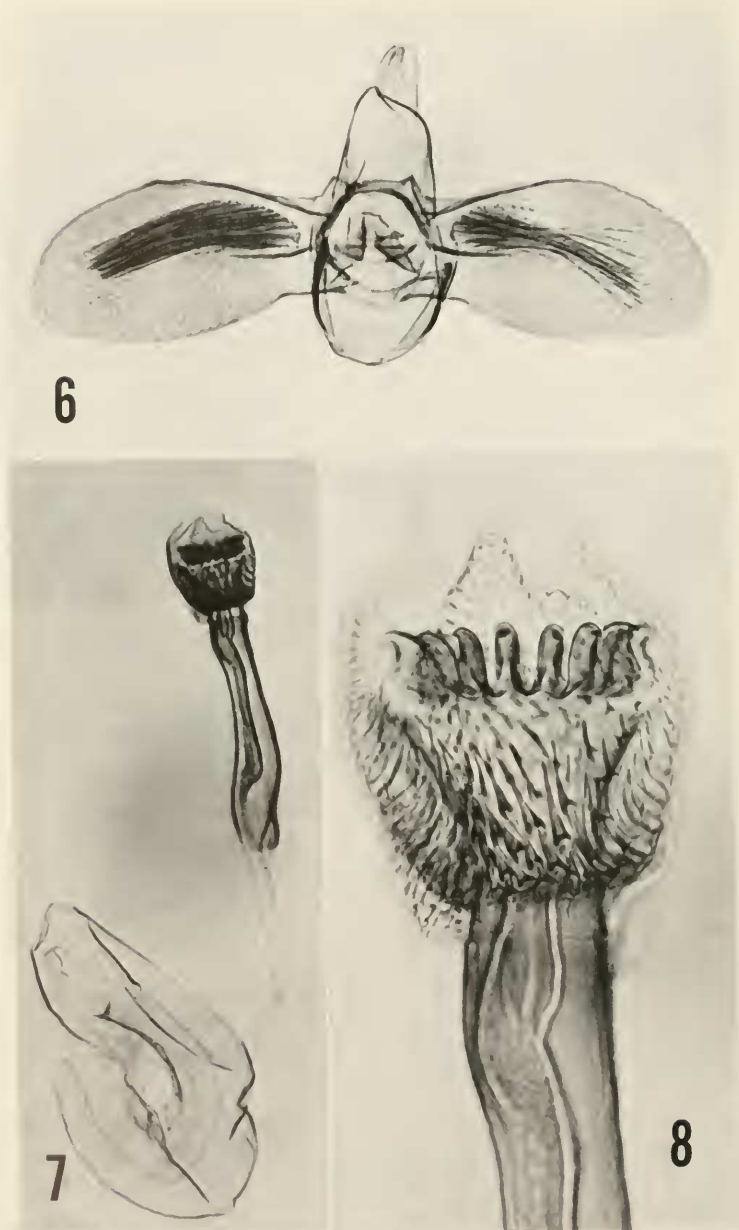


Fig. 5. *Neomachlotica spiraea*, female paratype, Fisheating Cr., Glades Co., Florida.

terminal bud borer according to Needham, entering the terminal portion of the stem as well. Needham noted that a gall is formed where the larva feeds extensively in the stem. The terminal bud of the host, together with young leaves, is tied with silk. Pupation is near the bud or away from the host plant in a protected area. The cocoon is a fluted structure of amber silk formed as a filigreed network of strands according to Needham (1955); this is very similar to cocoons of *Ussara* species, a genus of mostly Neotropical Glyphipterigidae.

More recently adults were collected while feeding on flowers of *Pluchea purpurascens* (Schwartz) de Candolle (Compositae) in an open cypress swamp along Fisheating Creek, Florida, from which series the holotype was selected.

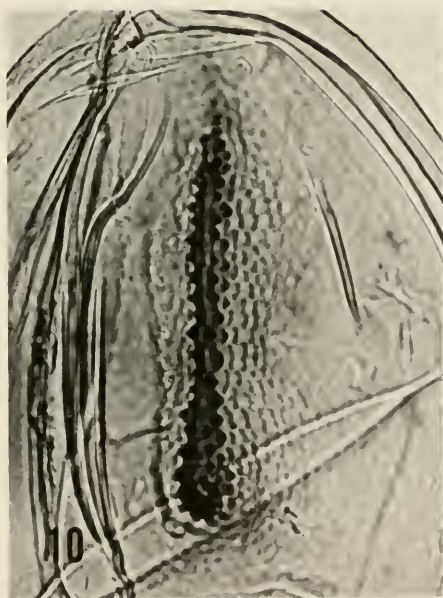
Remarks.—Available specimens of *Neomachlotica spiraea* show no marked variations in wing pattern or coloration. As noted under the generic discussion, there are several species in Mexico, Central and South America, that superficially are very similar to *N. spiraea* but that have distinct genitalia. The specimens of *N. spiraea* from the Dry Tortugas are too poor to designate as paratypes but appear to be the same species as the mainland specimens. Until the species is reared again, no further details of the immature stages can be given.



Figs. 6-8. *Neomachlotica spiraea*, male holotype. 6, Male genitalia. 7, Aedeagus (enlarged). 8, Detail of tip of aedeagus (Fisheating Cr., Glades Co., Florida) [USNM slide 77151].



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Figs. 9-11. *Neomachlotica spiraea*, female paratype (Fisheating Cr., Glades Co., Florida).
9, Female genitalia. 10, Signum detail. 11, Ostium detail [USNM slide 77152].

The specific name, *spiraea*, is derived from Latin for "the meadow-sweet."

ACKNOWLEDGMENTS

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